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RED-TAPE *versus* EFFICIENCY.

The virtues of sweet-oil and india-rubber are thoroughly appreciated by business men who desire as little friction and concussion as possible in the affairs they conduct. The evils resulting from too great a reliance upon cast-iron and red-tape are recognised by all but the most conventional of administrators. The success of Lord Kitchener was not more due to the fact that he had a free hand than to the practice he adopted of selecting experts, telling them what he wanted and leaving to them the methods of attaining it. Of course system and order are necessary to success in all large organisations, but these may be attained without insistence on every petty formality and without always attempting to exact military discipline. The use of red-tape in a Government department is necessary—*but it should be broad enough.*

The chief duties of the Board of Agriculture are (*a*) to prevent and control disease among domestic animals, (*b*) to collect and publish statistics concerning agriculture. Since its primary object—its veterinary work—was taken out of the hands of the technical experts and entrusted to a military man the change has been made evident by an ever-growing attempt to force regulations into a mould, to trample upon any individuality, and to resent the performance of the most urgent duties until every petty detail of departmental rule has been fulfilled. This is the spirit which would have court-martialled Nelson for not seeing the admiral's signal. When the Rabies Order was issued it was ordained that the muzzle should be of a certain shape and of a certain material. This fixed rule did no good, but it caused irritation and ill-feeling. Everybody outside of the Animals Division of the Board of Agriculture knows that the only essential in a muzzle in connection with rabies is that it should be some kind of a visible token on a dog's head. The spirit of military uniformity prevailed over the necessities of the occasion.

Swine-fever offers many illustrations of this same cast-iron and red-tape method, with the result that unnecessary expense is entailed, and ill-feeling generated. This might, perhaps, be not altogether a disadvantage if efficiency of control over disease resulted. Unfortunately quite the opposite obtains, and there are few districts in which the Board of Agriculture has not by its methods alienated some of the best and most widely respected veterinarians. First-class practitioners do not like being obliged to send viscera to London so that their diagnosis may be officially verified. They object especially to the cases in which they have diagnosed the disease during life and are contradicted by the official inspection of intestines. Over and over again the correctness of the practitioner's diagnosis has been made manifest by the spread of the disease—but only after the lapse of days and the loss to the owner of perhaps half a score of his pigs.

Every divergence of opinion between the Board's officer and the practitioner is supposed to be an error on the latter's part, and so we have in published returns a difference between the cases "returned" and those "confirmed," which leads the layman to believe that diagnosis is not a strong point with veterinary surgeons. The Board seems to fancy that diagnosis may be made a mechanical thing like the folding of envelopes or the writing of memo's. Diseases of the most definite kind do not always show distinct signs of their nature. Swine-fever may be diagnosed during life and leave no sign of its existence to a post-mortem examiner. It may cause gross lesions in the intestines and give no diagnostic sign during the victim's life. If the Board of Agriculture would send over to the Local Government Board they might learn to their amazement that the medical practitioners diagnose typhoid fever on the average about the second week of its existence. This necessary difficulty the layman cannot understand, and so when he meddles with medicine his ignorance can only explain it by a cynical reference to the experts pretentious ignorance.

Control of disease is a constant war with an enemy, and should be conducted accordingly. As soon as disease is detected it should be attacked. The Board's idea is that everything should be done by rule of thumb, and procedure regulated from the centre by some who are not and cannot be experts. An outbreak of swine-fever may be known to a local veterinary inspector—he must not move. He tells a policeman, policeman wires to London, the Board wire to inspector saying "be ready, to-morrow you will receive instructions.." Then next day he is permitted to act. He kills the visibly diseased, and the rest, infected or not, wait for a lay inspector who possibly does not come for a week. By this time a dozen pigs are dead for which no compensation is paid but which might have been sold as food if killed earlier.

Suppose a veterinary inspector attends at an outbreak of swine-fever and sees over a hedge, on other premises, a further outbreak of disease. He can do nothing without his marching orders. If he does he saves the owner loss and prevents spread of disease. If he does he is probably removed from his office, but certainly censured and possibly made to pay for the diseased animals he killed. What would Nelson have done? What would a cast-iron Board have said to him?

Dr. Sangrado when he lost a patient that he had repeatedly submitted to venesection only regretted that he had not bled him further. The Board of Agriculture not satisfied with the unsuccessful use of red-tape propose to enforce its use more widely, and that in face of the report of a Departmental Committee. The Committee report that the owner of a glandered horse should be allowed to report directly to the veterinary inspector or to the police. The object of this recommendation is to save time, to conciliate the owner who objects to police patrolling his stables, and to make legal the procedure which common sense and expediency suggest is the most essential.

Against this recommendation Major Tennant specially protests in a note. His protest is based upon the opinion that it would "cause inconvenience and confusion without carrying with it any compensating advantage." He seems not to know that 80 per cent of the cases of glanders are now reported, not to the police but direct to the veterinary inspector. He urges that as Section 4 of the Act enacts that diseases must be reported to the police, an alternative method for glanders "would obviously create much confusion in the mind of a stock-owner." The reply to this is that it is not obvious, and that daily practice falsifies his prophetic theory.

The note goes on to say, "The existing method is for general purposes an obviously desirable one as it is on the police that the duty is thrown of the adoption of administrative measures to prevent the spread of disease." What is the meaning of "administrative"? Does it consist in receiving notices or serving them? Is diagnosing the disease an administrative act, or is ordering the animal to be destroyed and seeing the place disinfected? Where is the policeman more of an administrative officer than the veterinary inspector? We submit with some confidence that the veterinary inspector is the essential part of all administration against disease in stock, and that the policeman is only a fifth wheel to the coach. In cattle-plague times the essential officer did the work and did it well. Since then he has been superseded by travelling inspectors who have taken part of his work away, and with it much of his emoluments. Is it intended to take a further share from the expert and give it to the policeman? Quite recently we heard of a case in Wales where a policeman made a post mortem on a pig. This we suppose in pursuance of his duty as the man "upon whom is thrown the adoption of administrative measures to prevent the spread of disease."

Hope deferred maketh the heart sick, and we are becoming heartily sick of the place the Board of Agriculture are constantly forcing the veterinary profession into. Major Tennant's note indicates the spirit in which the expert who is indispensable is made subservient to red tape and military uniformity—neither of which are important or expedient.

ARMY VETERINARY DEPARTMENT.

From *The London Gazette*, Tuesday, Sept. 12.

Vet.-Lieut. F. Eassie to be Vet.-Captain.

Three additional veterinary officers will leave on Saturday for the purpose of examining the mules and oxen now being purchased for service in South Africa.

ABSTRACTS FROM FOREIGN JOURNALS.

Case of Spasm of the Eyelids, Corporæ Nictitans, and Muscles of the Face.—Brought before the Central Veterinary Medical Society of France by M. Mouquet, 27th July, 1899.

Gentlemen, I have the honour to bring to your notice a light, well-bred mare of docile temperament, eight years old, which had to my knowledge worked well for the past 18 months, about which I have been consulted. She is suffering from a nervous affection which, on account of its rareity, appear to me to be worthy of bringing to your notice. The symptoms are:—

1. Bilateral spasmodic blinking of the eyelids. The motions are excessively rapid, particularly when the patient is excited. I have been able to count 180 blinks per minute, but this is less than they really are.

Each blink as you will see is accompanied by a peculiar noise caused by the contact of the edges of the eyelids, and though not so great resembles that made by rapid smacking of the lips.

2. A rapid blinking to and fro of the corpora nictitans, which is continued even when the eyelids are held open with the fingers.

3. A series of fibrillar contractions of the muscles of the face, and vermicular contraction of the skin of the lips, nostrils, chin and cheeks, which become more rapid and accentuated when the patient is excited by exercise.

These symptoms show themselves with greatest intensity when the animal stops after quick work. They also are seen, but in a less marked degree, when excited by other means such as hitting on the forehead, etc. They disappear altogether when rested for a short time in the stable, although the movement of the eyelids is a little quicker than normal.

From time to time, but at irregular intervals, one of the fore limbs is brought forward (pointed) and the skin twitches and trembles. These twitchings are sometimes absent a long time, and are only seen in the fore limbs. There is an entire absence of pain. —Translated from *Recueil de Médecine Vétérinaire*, August 30, 1899.

Joshua A. Nunn, A.V.D.

Further Statistics on the Treatment of Milk Fever According to Schmidt.

Docent Rusterholz, of Zurich, has collected statistics of 197 cases of milk fever which have been treated by 35 Swiss veterinary surgeons. Of 197 cases 154 were completely cured, giving an average of 78·17 per cent.

Considering that previous continental statistics give an average loss of about 50 per cent., the extraordinary success of Schmidt, of Kolding's, treatment is evident, for the Swiss loss is only 21 per cent., whilst the German statistics of Nurrmann, and the Danish statistics of Jensen give an average loss of 17 per cent. (with these averages before us in cattle living under decidedly different conditions and in decidedly different climes, it will be hard to explain

away any much greater percentage of losses in England under Schmidt's method of treatment.—Trans.)

If one closely examines the 43 cases in Switzerland which ended unfavourably the statistics appear still more favourable. There were 11 cases in which true milk fever was already past, and nine deaths having nothing to do with milk fever, and two deaths from mastitis. Further, of 18 cases of necessary slaughter in which the course of the illness is not explained, nine suffered from foreign-body pneumonia. Together there were 40 animals slaughtered, 29 of which were not slaughtered because affected with true milk fever, and of the three that died one was already *in extremis* when the iodide injection was given.

At all events German, Danish, Swiss and Austrian statistics relating to 2,400 cases treated, give an average of at least 80 per cent. of recoveries under Schmidt's treatment.

Rusterholz condemns administration of medicine by mouth previous to the arrival of the veterinary surgeon. He lays stress on the value of comfortable position which gives least risk of putting a premium on lung inflammation, fractures and distorsions. Give a thick bed of straw. Affections of the udder can be certainly avoided by disinfection of the instrument. The teats at the conclusion of the injection should not come in contact with the ground.

In severe cases success will be more certain if the dose of the infusion is repeated after some hours. As soon as the animal gets on her feet again she can be milked.—*Berliner Thierarzt Woch.*

G. M.

[These results are so at variance with the success obtained in this country that we can only reconcile them by supposing that here all fatalities are counted, whereas abroad all indirect cases of death are eliminated.—Ed.]

VETERINARY SOCIETIES.

NATIONAL VETERINARY ASSOCIATION.

The Prevention of Tuberculosis.

(*Continued from page* 146.)

Mr. J. Pollock: In regard to the point asked by my friend, Mr. McGavin, as to whether the testing had any effect upon animals in calf or about to calve, I may say that about a month ago I tested several animals, one or two of which were registered to calve within a fortnight and others within a month, and in no case was there any ill result. In one case I registered a temperature of 105·6 at the close of the testing, and seeing the animal was soon to calve I proposed retesting that animal in a month or two's time. With regard to the frequency of the testing mentioned by Professor McFadyean, I have before me here the results of several tests which I applied upon the same animal, and with your permission I should just like to ask the author's opinion, or anyone else who may assist me in coming to a better opinion than I have at the present moment, to assist me. I have a record here of three years on one animal. In July, 1897, I tested her, and the highest temperature on that occasion was 102·5. A year afterwards, upon June 22nd, 1898, I retested the animal when the temperature rose to 105·5. Being a valuable animal and not in close proximity to any others, I suggested placing her aside in case there should be any condition of the system which may have given rise to this temperature. In the following August, on the 18th, I retested with the result that instead of having a temperature of 105 the highest registration was 102·5. She was not giving much milk and we kept her over. I retested her this year on March 6th and 7th with the result that she again went up 105·5. I tested on the 5th April, one month later, and the highest temperature then was 102 A fortnight later the temperature remained at 102. She was slaughtered and the only evidence of tuberculosis was found in the mesenteric gland which was slightly affected. I should like to hear an explanation as to how the temperature could in 1897 be practically normal, in 1898 risen to 105·5, and three months later practically normal again; then after a year's time again back, and after retesting in a month and again in a fortnight the temperature practically gone back. I have again one other case and with that I shall close although I have several in the same category. In 1897 I tested an animal whose temperature was normal throughout. In June, 1898, a year later, her temperature went up to 106. I retested three months later when her temperature was normal. I retested on the 8th July of this year and she was normal. In 1897 she was normal; in June, 1898, her temperature was 106, and three months later the temperature came down to normal, and on retesting this month there was the same normal result.

Mr. W. Hunting: The sentence in this paper that I think most important is where the author says, "The great point to be kept in view is the principle that it is a contagious disease, and as long as tuberculosis exists in animals, so long will there be the risk of infection from animals to man, and *vice versa*." That, I take it, is the keynote of all that can be said about the prevention of this disease. If we go a little further in the paper, when it comes to applying this general principle, I find that our essayist becomes a little weaker. He says, "The two greatest natural enemies to the tubercle bacillus are the sun and the active little phagocyte," and then he reasons that the best thing to do is to give them plenty of fresh air and sunlight, and plenty of good food, and keep up a high state of health. I have no objection to all this, but when it is put prominently forward, as it is very often, as though it were the essential, instead of the fact of contagion, I think it is apt to do a great deal of harm. Practical inferences are drawn from these things, and the farmers and the cowkeepers are frightened and misdirected. If increased space and increased ventilation are the two most important things to meet this disease, that means money and trouble, and in many cases an utter impossibility. It distracts attention from the essential condition of contagion. We must remember, too, that these points have surely not the importance that has been forced upon them. In the test of Her Majesty's herd of cows by Professor M'Fadyean, every animal but one was infected. I take it that in the case of the Queen's cows there would be nothing wanting either in the way of ventilation, space, food, or general good management. This is a fact which goes to knock on the head a good deal of the argument which is frightening the farmer and cowkeeper and preventing him appealing to Mr. Long for assistance. I am told also that this matter of sunlight is not to be relied upon quite as much as people think. In New Zealand they have more hours of direct sunshine than we have here, and yet tuberculosis has been found in herds that have never been housed, the cause of course being contagion, and that is why I want that one point brought prominently before us.

I do not quite take the same view of tuberculosis as Professor M'Fadyean. He rather seemed to imply, that

it was a harmless or mild disease which prevailed a little among cattle, and a little among men; but it was not a bad sort of plague, and if it did kill a few people, it did not kill many animals. He did not tell us why it did not kill the animals. It is because human beings eat all the diseased ones before they have time to die of the disease. Now, that is not a decent diet. It is not the right thing to feed men on, and if it is a question between eating all the tuberculous animals and letting them die, I should prefer to let them die, as they inevitably would if the owner did not sell them. If you cannot show there is much loss you help the Board of Agriculture to maintain their policy of doing nothing. Professor M'Fadyean wanted to know where was the loss. There are losses from extra feeding, losses of milk, losses occasionally by death, and losses from abortion—altogether a considerable amount of loss. In the cases I have seen in cowsheds I reckon that about 2 per cent., or nearly that, of animals die, or have to be got rid of to prevent them dying, as the result of tuberculosis. I believe that in other cowsheds it is much the same. Now such a percentage would run into nearly 50,000 animals a year. The loss from some other diseases for which legislation has been effected did not amount to 50,000 animals per annum, and therefore if it was worth stamping out—say pleuro-pneumonia, when there were not 20,000 animals a year infected—surely it is worth having a try at tuberculosis. Professor M'Fadyean urged, as arguments against doing anything, the cost and the difficulties. The difficulties, as far as I can see, are three: the Board of Agriculture is one, the Royal Agricultural Society of England is the second, and Professor M'Fadyean is the third. (Cheers.) The Board of Agriculture has told us why it would not interfere, and its reason, as stated by Mr. Long, is that the basis of scientific knowledge is too defective upon which to form regulations. Mr. Long ought to know that the scientific basis of tuberculosis is better understood than the scientific basis of any disease included in the Animals Diseases Act at the present time. We know more about tuberculosis than we ever did about the three diseases we stamped out, namely cattle plague, pleuro-pneumonia, and foot-and-mouth disease. The scientific basis upon which our knowledge of tuberculosis depends is perfect so far as is absolutely necessary to allow us to form regulations for the stamping out of the disease. The cost of course is another thing. Professor M'Fadyean says that voluntary effort is absolutely rational. Yes! but it is a little slow. We have had voluntary effort opposed to all the diseases in this world, and there are a lot of them left yet. If you can persuade the farmer more than you have any other section of the British public to make an extra voluntary effort you will achieve something very near a miracle. Besides, it does not follow that because a thing is rational that that is the best thing to do. Voluntary effort I am quite willing to allow is an important matter. Probably no disease was ever stamped out by Government without the voluntary effort of stockowners assisting them; but voluntary effort never yet controlled any disease without State aid. With tuberculosis there are one or two reasons that did not apply to any other disease so strongly as they do to this why State regulations should accompany voluntary effort. As far as I know the voluntary effort at the present day consists in testing with tuberculin and getting rid of the reacters, and until the State regulates that kind of thing I cannot see how voluntary effort is to prevent the passing of the animal from one farmer to another, and finally to the butcher, whom the local authorities then punish for selling bad meat. With State guidance I am prepared to say that the more voluntary effort we have the better, but to rely entirely on voluntary effort is to rest on a broken reed. We shall always have to compete with dishonesty, always have to compete with negligence, and unless these things are provided against by some State regulations I do not see how we will get much farther. But, after all, Prof. M'Fadyean is not opposed to all regulations. He spoke very strongly in favour of the compulsory notification of the disease in cows. Now, if you once have compulsory notification you will very soon have to include calves and bulls—in other words—you will extend it to the whole bovine race. Compulsory notification carries with it, too, some penalty for not notifying, so that there would be some inspection, and there would be some restrictions on the movement of diseased animals. That would follow as a natural corollary. These two things, restriction of movement and compulsory notification could not be carried out without scheduling the disease under the Board of Agriculture, and therefore I am inclined to accept Prof. M'Fadyean as a good deal on our side, because he is logically pledged to the necessity of scheduling the disease for the purpose of notification and restriction on the movement of diseased animals.

Mr. JOHN DUNSTAN, in reply, said: Mr. Chairman and gentlemen, Professor M'Fadyean spoke rather disparagingly of the view of getting rid of tuberculosis, and he would almost lead one to suppose that tuberculous milk was non-infective: but as one of our medical friends has quoted some experiments made by Professor Kanthack of Cambridge, in which he collected milk from 16 different supplies in that town, inoculated guinea-pigs with that milk, and in nine cases produced tuberculosis in those animals, experimentally, I do not think Prof. M'Fadyean's theory can be upheld. If that milk is capable of producing disease when inoculated, it is only reasonable to suppose it is also capable of producing it when taken into the alimentary canal. Prof. M'Fadyean expressed the opinion that stockowners do not lose much by the presence of tuberculosis in the herds.

Professor M'FADYEAN: I think I am entitled to rise to make an absolute correction. I sat silent under the misrepresentation of Professor Williams, but I am not going to do it for a second time. When the shorthand notes come to be published I venture to say that it will be found that I said "according to my opinion farmers' losses were not serious except when they neglected such means of precaution as the removal of animals suffering from tuberculosis." That is a very important qualification. There are various other misrepresentations which I shall not seek to correct owing to the short amount of time remaining for discussion.

Mr. DUNSTAN: From what Prof. M'Fadyean said he appeared to mean that the voluntary method was much preferable, because it would pay the farmer. If it is only in these extreme cases that the farmer meets with such loss, one would hardly think that the method which he recommends of using the tuberculin test and repeating it again in three months, and then repeating it twice a year, would pay a farmer, because he must meet with considerable losses to pay him at all. I do not believe we shall ever get rid of tuberculosis in this country unless we have some aid from the Government. I do not think we shall do it by the voluntary method at all. We must control the use of tuberculin too. We must see that the tuberculin comes from a reliable source, and we must restrain its use by veterinary surgeons and farmers themselves before the cows are sold. There is a great deal of that done, stockowners do it themselves, and I know instances in which veterinary surgeons have done it in the North Midlands. Unless we can control the application of tuberculin I believe it is not much good applying it. A question has been asked whether tuberculin produces abortion. From my experience I may say it does not. I have tested a great many cows in calf, some of them within a week of calving, and at all periods of gestation, and there was not a single case of abortion in all the cases I have tested. I think, gentlemen, these are the only points I have to deal with.

THE SANITARY INSTITUTE CONGRESS.

Conference of Veterinary Inspectors.

In connection with the annual congress of the Sanitary Institute held this year at Southampton, there was a conference of veterinary inspectors held in the Council Chamber of the Hartley College on August 30th. Mr. W. Hunting, F.R.C.V.S., presided.

DIFFICULTIES OF DEALING WITH TUBERCULOSIS IN CATTLE.

By T. B. Goodall, F.R.C.V.S.

Abstract.

The intention of the paper is not to throw discredit on what has been done with regard to tuberculosis, but rather to point to the difficulties of carrying into effect the methods suggested for dealing with the question.

Unless the Government are prepared to take the matter in hand, the position of the veterinary surgeon is not an enviable one. He may detect the disease and offer suggestions, but he has no means of knowing whether they are complied with.

Judging from the tenour of a speech reported to have been delivered by Sir G. Brown to the students at Cirencester College lately, we can scarcely expect the government to deal with the question.

We take it for granted now, that tuberculosis is very prevalent amongst cattle, and that there is a certain amount of danger to man by his ingesting the uncooked milk from such animals.

By the application of the tuberculin test, we can detect almost infallibly affected animals.

How is the veterinary surgeon to advise the owners of cows in small dairy-farms to deal with re-acting animals? those that give no clinical evidence of being affected?

They must be either isolated, removed from the premises, or fatted for the butcher.

Either of these methods may be carried into effect by people of affluence, who merely carry on their dairies for a hobby, but not so with the dairy-farmer, whose whole capital is invested in his stock, but who has now but a narrow margin for profit—but if we say that he must be compelled to slaughter, or get rid of, or isolate, some thirty per cent. of his dairy stock, it would mean ruin to him.

With the general accommodation of an ordinary dairy farm genuine isolation is impracticable; there is but bare byre-space on the premises for the cows; we have no spare place for re-acting ones, so that, unless they are kept in the same house as the healthy stock (which is mere quibbling with the question if the disease is so contagious as experts say), or special isolation sheds must be erected on all farms.

And again, to give real effect to the many suggestions made, quarantine sheds must also be built for the housing of newly bought cows before they are tested and allowed to mingle with the herd.

Unless the veterinary surgeon has the power to mark or brand re-acting animals, he has no means of distinguishing them; but the owner naturally objects to this because it would lessen the value of his cows.

There are other difficulties connected with the isolation of re-acting cows.

If a farmer elects to sell his re-acting cows, he may send them to market where they may be purchased by another farmer, and the first farmer may buy in cows that have reacted, because none of them are marked or branded, and they cannot be identified.

If they are slaughtered they must be sold at a great loss to a second or third-rate butcher.

Recognising these difficulties I have refused to test the cows of dairy farmers, for I kuew that they could not comply with the instructions and regulations that should follow.

To sum up, if the matter is taken seriously in hand, it seems to be necessary:—

(*a*) That dairy-farms must have isolation and quarantine sheds.

(*b*) That the Veterinary Surgeon must have power to mark or brand.

(*c*) And needs to exercise caution in certifying animals as free from disease.

(*d*) He should have power to control the movement of re-acting animals.

(*e*) Unless the tuberculin test is made general and compulsory it is worse than useless.

In the meantime it should be a punishable offence for anyone to keep an animal in milk, with tuberculous disease of the udder, on any premises from which milk is sold to the public.

Discussion.

Alderman Cain (Barth) wanted to know if Mr. Goodall would inform them in the event of what he had recommended being adopted, viz., that cattle that reacted should be fed up for the butcher, what was to become of the butcher? He was not aware that the animal had reacted, and the Inspector might come round and seize the carcase. That would be unfair, and he thought they should have some suggestion as to how the butcher should be protected.

Mr. S. Villar, F.R.C.V.S., said the paper contained so many good points that it was almost impossible to add anything to it. With regard to the application of the tests, he pointed out how careful they must be to look after the details of the cattle. He remembered a case where the temperature fell considerably in the course of two hours, and he pointed out that those animals had been out in a snowstorm, and the speaker enlarged upon the conditions of exposure to the air and the drinking of cold water. By the drinking of cold water they would have the temperature lowered to the extent of about two degrees. Mr. Goodall said he had refused to test in some cases because he would not be associated with anything like a shady transaction. That was in reference to an animal which had reacted being sent to the market for sale. It was all very well to have good intentions, but it seemed to him that if they as veterinary surgeons carried out their duties properly, when they gave their certificates their responsibility ceased. He did not hear anything said about the isolation of infected animals in the fields. He took it that the animal could find no better place picked out than in the open air, and under such circumstances he was certain a large number of animals would recover. If an animal had some sort of protection in the shape of an open shed, she could not have any better conditions in which to recover from a slight attack. A very important point of the question they were dealing with was the remarkably quick way in which tuberculosis spread amongst the herd when an infective animal was present, and he quoted a case in which seven out of eleven animals became infected in eleven months.

Mr. Ford said the question of stamping out disease would claim the attention of County Councils in an ever increasing degree. He gathered that all dairy farms should have a properly arranged cowshed for the purpose of isolating cattle which had reacted and which were infected with disease. That was a beautiful theory, but he wanted to see things brought to a practical issue. He should like to know whether anything could be done in the way of establishing cattle hospitals on the principle adopted in regard to human hospitals into which cattle could be drafted to be cured, and so relieve the poorer farmers of their infected stock and prevent the spread of the infection.

Mr. SLOCOCK said with regard to the fall of temperature noted by Mr. Villar, that the incident helped to point out that the tuberculin test should be applied with great care. If it was true that 30 per cent. of our milch cows were affected with tuberculosis that showed what a vast difficulty they had to face if they refused to accept the milk of those cows. He took it from experiments frequently repeated that the milk of those cows, although infected, was not injurious to health, and that unless they had tuberculosis of the udder or tuberculosis to any great extent the milk of the cow was good.

Mr. SUGDEN said half measures were worse than no measures at all. If action was taken by the legislature it should be taken for the country as a whole. Lancashire during the past session had obtained several Acts affecting particular areas, which had the effect of driving the cows outside these districts, and in his opinion this simply meant the driving of tuberculosis out of one district into others to accumulate more quickly than it had done hitherto. The question would have to come up as to the destruction of cattle suffering acutely from disease communicated by others, and its being paid for to some extent.

Mr. A. L. BUTTERS thought tuberculosis should be scheduled amongst the contagious diseases of animals. When they considered the milk supply of our large towns and how much was drawn from areas considerably beyond the powers of the Local Authorities, though those authorities might strictly carry out the provisions of any Act which might have been passed, yet those cows were far beyond their power of dealing with, and the danger of infection from tuberculosis as affecting the milk would not be reduced by their action unless the measures were adopted uniformly all over the country.

Mr. J. T. KING said that with regard to the question as to how long cattle after being tested would again show signs of reaction to tuberculin, more information was wanted. He had tested a great many cows lately, and he might mention that out of 90 there were 35 that reacted. These reacters were tested again within about a month of the first test, when only 27 reacted, the other eight having been either rendered immune or received more careful treatment which rendered them unaffected.

Councillor ROBERTS referred to the existing practice in Liverpool, and gave some interesting facts and figures connected with the keeping of cows at one of the Lancashire asylums, of the Visiting Committee of which he was a member.

Mr. E. W. BAKER said he could not help thinking of the importance of pressing on the Government the necessity of adopting legislative measures, and thought they should request the Government to appoint as inspectors for the inspection of cattle and dairies only those who were competent to undertake the inspection.

Mr. SHELMARDINE thought the employment of butchers as inspectors was undesirable, because it was not well to put a butcher over a butcher. The importation of diseased milk or meat must be prohibited at all costs. It had been the fashion for cows to change hands without a veterinary certificate, but he did not see why a veterinary certificate should not be required as much as in the case of a horse. He thought that would be one way out of the difficulty. His own idea was that animals should be examined twice a year to find out whether they were healthy or unhealthy. The question of compensation was a serious matter, but one which must be met, and he thought the public should help to find the means to pay the costs to some extent.

Mr. H. HALL thought that if the applying of the tuberculin test was to become compulsory, the public should certainly bear the expense of the test being applied.

The PRESIDENT said Mr. Goodall had told them at the end of his paper that unless the tuberculin test was made general it was worse than useless, but he (the President) was inclined to think that he hardly covered the whole ground. At the present time they had a widespread private adoption of these tuberculin tests which seemed to suit the interests of some people. They had a recognised system of fraud, for it consisted of testing a man's stock and weeding affected animals out at the expense of other people who bought them. As a matter of fact what had saved the British public up to the present time from being widely affected by tuberculous milk was that there was only one per cent. of the cows affected with disease in the udder, and the infected milk was so diluted by the milk of the other cows that those who drank it escaped infection. If the tuberculin test was continued to be privately carried out there would soon be cows without any tuberculosis in one shed, and cows with nothing else but tuberculosis in another. The result would be that they would get pure milk from one shed, but from the other so concentrated and infected a fluid as to be a danger greater than we have had before. The whole drift of opinion seemed to point to legislative action and a real attempt to suppress the disease. The difficulty in the way was the interest of stock owners, but he did not think that was an insuperable one. The people who cultivated tuberculosis were the farmers and breeders of cattle, and the only people who suffered from regulations or restrictions were the butchers and cowkeepers. The farmer who was absolutely able to test any of his cattle could go on breeding tuberculosis as long as he liked, and no one could interfere with him. Why? Because the Board of Agriculture did not intend to move until they were obliged to do so. They would not move until the Royal Agricultural Society moved, and that Society existed in the interests of and for the protection of the landlords and breeders of pedigree cattle. So long as Government protected pedigree stock and the owners of pedigree stock nothing would be done save the quiet persistent practice of the so-called voluntary method of tuberculin testing? It would take four or five years before the pedigree men cleared out their own herds, and after they had done that they would discover that "in the interests of the nation" legal measures should be taken for the suppression of tuberculosis. An unfortunate thing was that the advisers of the Board of Agriculture and of the Royal Agricultural Society were extremely cautious men. They advised voluntary effort and that only. It rendered the means easy for those who were the richest and the strongest in the country. Fortunately behind the central authority were the numerous local authorities who would put in practice the provisions of local Acts, of the Cowsheds, Dairies and Milkshops Order and the Public Health Acts. Thus the cowkeeper and butcher would be so worried that they would be forced to exact some warranty of soundness from the vendors of cattle to protect themselves. Such warranty could be exacted by a little union of buyers, and would be an effective instrument for encouraging the agriculturist to appeal to the Board of Agriculture for the assistance and control which must come—and the sooner the better.

Mr. GOODALL briefly replied on the discussion, and in answer to Mr. Villar said he contended that in dealing with tuberculosis the matter should be left entirely in the hands of the veterinarian, and that the tuberculin test should not be used by him unless he had control of the cases afterwards. He thought they had no right to go to a farm, test cows, take the fees, and leave it to the owner to do what he liked with the reacters afterwards. Their duty was to protect the public. He thought the building of isolation sheds on farms almost impracticable. The wealthy members of the Royal Agricultural Society and others could take up the matter of isolation, but those who engaged in dairy farming, many of whom had to live from hand to mouth, could not be expected to follow the example of those rich people who could get rid of their cows with ease, and could build separate sheds.

COWSHED INSPECTION.

By SIDNEY VILLAR, F.R.C.V.S., County Veterinary Inspector, Middlesex.

Cowshed inspection as at present obtains in this country is on a most unsatisfactory footing.

The conditions under which milking cows may be kept is in the hands of Local Authorities, who may make their own regulations as to sanitary arrangements of cowsheds in the occupation of persons following the trades of cow-keeping and dairying, and for the inspection of their milking cows

Having made such regulations, the Local Authority may enforce them or permit them to be absolutely ignored. In consequence, cow-keepers in some districts, more especially in urban areas, are placed under rigid sanitary supervision, whereas in other districts milk is allowed to be produced under conditions and surroundings which may rightly be described as filthy in the extreme.

Milk so produced without sanitary restrictions at out-of-the-way farms in country districts is, in these days of quick railway transit, sent to our populous centres.

This is detrimental to the public health, and unfair to the supervised cow-keeper.

The aim of official cowshed inspection is the production of pure milk—to this end proper provision for the health of the cows, the cleanliness of the animals, and their surroundings, and their supervision by competent officials should everywhere be made compulsory.

Although in rural districts, where cows are housed for only a few weeks in mid-winter, or where they are kept continuously in the open, some laxity in the construction of cowsheds may be allowed to prevail, it is in exactly such places as this that the surroundings of the cows—more especially as to the water supply both for their drinking and for the cleansing of milk vessels, together with the situation of manure heaps and cess-pits—are found to be bad.

So many different views are held by dairy farmers as to the best design for cowsheds, and so many buildings not originally intended for occupation by dairy cattle are converted to that purpose, that it is well for inspectors to deal broadly with the question of design, and to approve of sheds provided certain fundamental details are complied with.

These essential details are such as provide for adequate ventilation and lighting, for an efficient water supply in or near sheds, and for floors and drainage so constructed as to render cleansing of the sheds effectual and easy.

Many opportunities have occurred to me of inspecting cowsheds in various parts of the country, and I am convinced that, speaking generally, there is no better method of housing milking cows than that in vogue on the better class dairy farms in the suburbs of the metropolis.

On most of such farms it is customary to keep cows in their stalls for at least eight months in the year. Some form of official inspection has long existed in these districts, and for many years past it has been the custom of the trade to invite purchasers of their milk and the public generally to call and view the cattle and their surroundings. In attempting to secure the approval of such visitors practical knowledge of the most successful methods of housing cattle for the maintainance of their health and cleanliness has been accumulated by cow-keepers, and the form of shed now used is the result of actual practical experience of the requirements of cattle, combined with scientific details as to ventilation and drainage suggested or enforced by the officials of the Local Authority.

Undoubtedly, the most important factor in the sanitary arrangement of a cowshed is ventilation, and associated of course with ventilation is the question of air-space.

Provided effectual means for the frequent changing of the air within the building is secured, the cubic space allowed for each animal may be permitted to be considerably less without detriment to the health of the occupants than is by many supposed.

A shed in which fourteen Shorthorn cows have been continuously tied up during the winter for the past ten years allows only 470 cubic feet per animal, yet it is within my knowledge that the cows keep remarkably well.

I do not advocate so small a cubic space, but am of opinion that a moderate-sized well-ventilated building is preferable to a large shed containing few cows, where the means of ventilation are blocked up to keep the interior of the shed at a genial temperature.

Bearing in mind the important part the wind plays in ventilation it will be recognised that the air of sheds in hilly districts, unsurrounded by other buildings, is much more readily changed than the air of sheds in populous places, provided that inlets for fresh air and outlets for polluted air are permitted to exist.

The amount of air required by an animal at rest is proportionate to its weight. Cows of different breeds differ enormously in weight; and the same animal at seven years old will usually weigh much more than at three years. It is therefore difficult to fix a mean aggregate area for inlet and outlet of air.

Mr. John Speir, an authority on this point, says:—"With a light breeze moving at from two to four feet per second, a byre may be amply ventilated with an inlet of twenty-five to thirty-five square inches per animal, . . . if the outlet area is at least equal to this." Another authority insists upon permanent openings, with an area of fifty-four square inches per animal for both inlet and outlet.

I am of opinion that in sheds which are continuously occupied a much larger ventilating area must be secured, with provision by means of louvres and shutters for varying both the inlet and outlet areas, depending upon the foulness and heat of the inside air and the position of the wind and temperature of the outside air. To this end ventilating openings should be placed on the roof and in both the front and back walls of sheds, with means for closing such apertures in rough weather on the windy side and of opening them on the lee side.

It is desired to secure adequate movement of fresh air at the level above the floor of which the animal is breathing—*i.e.*, within two feet of the ground; but it is not generally permissible to put the inlet openings at so low a level as this; in only few and protected places can they be allowed. It is absolutely essential to protect a milking cow from cold currents of air or draughts; if such impinge on her she will probably quickly develop mammitis, or contract a "chill." The best position for the inlet openings is in the outer walls about six feet from the floor. Almost any opening will do, but its floor should slant slightly up towards the shed, and its size should be made capable of regulation. Perhaps there is no better than an opening of three feet long by two feet wide, fitted with a glass window frame, opening at top and bottom on a central pivot.

In practice drain pipes inserted, or angular openings in the brickwork with their base to the inside of the shed, answer well. Such are usually stuffed with straw in cold weather; not an objectionable proceeding, provided its removal is not neglected. The cold air admitted by these wall openings will fall to the level of the cattle.

All windows to sheds should be made to open widely, and the external doors should be half doors, so that the

top may, if need be, kept open night and day. Half-open sliding doors are draughty, and cannot be too strongly deprecated.

To provide for roof ventilation no loft or ceiling must be allowed, the roof itself being made of slates or tiles; best of all, of red pantiles, fitted to the rafters by pegs and without mortar. The interstices in this kind of roof allow of the escape of air, and the inflow of water is prevented. Corrugated iron and wood covered with felt are objectionable roof materials.

High up on the walls, or better still, in the roof—or if it be a span roof, at its apex—special outlets for the egress of polluted air must be provided. Perhaps nothing is better than a wooden chamber or dome with louvred sides running along the whole length or a considerable portion of the apex of the roof, such chamber opening directly into the shed, and capable of regulation by shutters worked with pulleys and cords.

Open fanlights in the slant of the roof have the objection that they admit rain.

Whatever the form of roof ventilation it must admit of regulation so as to prevent down draughts in certain positions of the wind.

As a rule cowmen keep their cattle in too polluted an atmosphere. It is not only necessary for an Inspector to see that means of ventilation are provided, but it is also necessary to ensure that such means are taken advantage of.

For the profitable production of milk it is necessary that cowsheds should be kept comfortably warm, an internal temperature of 58° to 60° F., combined with a fresh and sweet atmosphere is the desideratum. In cold weather, if anything like one thousand two hundred cubic feet for each cow is insisted upon the sheds will have to be artificially warmed.

It has been suggested that cows should wear rugs, as is usual with horses, I have seen it tried but they soon make them foul with their droppings so that their general use is impracticable.

A cubic space of at least 600 feet should be provided for every cow; in calculating the cubic space the height of the shed above fourteen feet should not be taken into account.

The provision of ample cubic space and ventilation is not in itself sufficient to prevent the spread of tuberculosis. In a well lighted, well ventilated shed, having an air space of 1,200 cubic ft. per cow, seven out of 20 cows which had been tested and declared free from tuberculosis showed a re-action when again tested at an interval of less than eleven months.

To secure the continued freedom of a herd of cows from tuberculosis, efficient ventilation, constant supervision and frequent testing with tuberculin is essential.

Old fashioned town cowsheds used purposely to be kept in a state of semi-darkness, the idea being that cows after a meal more quickly lie down and rest, and that under such conditions milk would be more profusely secreted, now however, the presence of light and sunshine is recognised as essential to the maintainance of a high standard of health.

The value of a particular window depends on the access of light to it, in a shed unsurrounded by trees and other buildings I have found a window space equal to one-thirtieth of the floor space of the shed gives ample light to the interior.

It is important that dark nooks and corners where cobwebs and dust might accumulate should not be allowed.

Cowsheds may with equal propriety be built of brick, stones or wood. If the latter, a brick or stone base of at least four feet should be insisted upon, the lower portion of all walls for four feet on their inside should be coated with a cement to secure an easily washable surface, this should not be limewhited, but all portions of the walls above this should be limewashed three or four times every year.

Blue Staffordshire bricks, red bricks set on edge, concrete covered with cement and furrowed to prevent slipping, all make good impervious floors.

In some districts it is customary to make the floor of the standing of chalk for about three feet from the manger, this is softer to the knees and brisket of the lying down cow, and is of advantage where bedding material is expensive, but it has the objection that it cannot frequently be washed and is a source of dust.

A floor covered with cement is cheap, durable and easily cleansed; but the material of the floor may vary so long as it is properly set and arranged for efficient drainage.

The design of the floor is important, the best form of floor allows of a depth of from five to six feet from the front of the manger for the cows standing, then arranged transversely to the standing should come the manure trench, a channel from twelve to eighteen inches wide and four to five inches deep, made throughout of the same material as the floor. This trench is for the reception of the fæces and urine, and is so arranged that these excreta should drop directly into the channel and not on to the standing place, so keeping the hind quarters and udder of the cow out of the filth.

The floor of the standing should have a fall from the manger to the manure channel of an inch, and the floor of the channel itself should have a slight fall outwards so that the urine gravitates to its outer edge, the channel should be carried from one end of the shed to the other, having throughout a slight fall to its outlet, should go through the external wall and discharge on to a proper gully.

This channel drains off the liquid and permits of the easy removal of the solid portions of the manure.

At the back of this channel comes the milking passage, which should be at least five feet in width.

The cow standings should be slightly elevated above the passage.

The standings may be arranged for one or two rows of cows. In a double shed, *i.e.*, one containing two rows, it is important that the cows should not face each other, their tails should be towards the central line of the shed.

The mangers may be set close to the wall, or at a distance of about four feet six inches from them; this forms a feeding passage in front of the manger, which is, however, of greater utility as an aid to ventilation.

Perhaps the best kind of manger is the half-round salt-glazed pipe, set in brickwork with cement, not more than five inches above the floor and running the whole length of the shed. It forms a continuous manger, not subdivided for different cows. At its lowest point is a channel controlled by a plug leading to the manure trench. With such mangers cleanliness is easily secured.

Mangers of iron or of brick lined with cement answer very well.

At two cowsheds within my district no mangers are used, the cows are secured in their stalls by the neck-trevis or clapse, and their food is placed before them in heaps on the floor of the feeding passage; after each meal the floor is swept. Very little hay is used, but such as is given is also placed on the floor. It is altogether the cleanest method of cow-feeding that I have seen.

Standings or stalls are made to accommodate a single cow or two cows. Both the single and double stall systems have their advocates. I prefer the double stall.

A standing for two cows need not be more than six feet six inches in width; two cows will stand and lie very comfortably in this space. If more room is allowed the cows will stand across the stall, and their droppings will fall on their beds.

The width of a stall for a single cow must be at least three feet six inches.

The depth of the stall from the manger to the manure channel should be, as I have previously pointed out, from five to six feet, the depth of the standings varying in each shed so as to accommodate cows of different length.

It is a frequent custom to put the mangers close in to the wall, and so to tie the cows with their heads to the wall; theoretically this is wrong, but in practice, provided ventilators are placed about three feet above their heads, it does not appear to be harmful or conducive to the spread of disease.

Veterinary surgeons know that the infection of pleuro-pneumonia, eczema epizootica, and probably also of tuberculosis is not so often conveyed by the diseased cow to the nearest animal as to others farther away; it is a well-known fact that the two earliest detected cases of disease frequently occur in cattle placed at different extremities of a shed.

Where cows are watered in their stalls directly from a main or cistern, an iron or zinc gutter, about 9 inches wide, fitted about 18 inches above the manger, and running the whole length of the shed is a good plan, the water being turned into this gutter twice daily. Occasionally the continuous manger, such as I have described, is used for both feeding and watering.

Iron or zinc vessels, one to each standing, continually filling but controlled by a ball-tap and cistern inside the shed answer well, but require much looking after to keep them clean.

There is some advantage in watering cows outside their shed, six or eight being turned out together for that purpose. Should anything be amiss with any cow it is more noticeable when she moves, also a fresh supply of air gets into the standings when they are unoccupied.

There is no risk to the animals' health, even in the worst days of winter, by turning them into a yard to drink, provided they are not kept out very long. Water should be supplied in troughs, cows should not be allowed to drink at ponds which quickly become foul from their evacuations—not that water so soiled is injurious to the health of the cattle or that the drinking of it affects the purity of the milk, but dirty water or water contaminated with fæcal matter splashing on the udders or teats may find its way to the milk pail.

A pure water supply for the purpose of cleansing the milk vessels is of greater importance than the purity of the water supplied to the cows themselves.

In a shed with its floor made as I have suggested no covered drain need be in the building. All urine or liquid filth is carried to the outside of the shed by the manure channel and is discharged on to a proper stone-ware gulley, of sufficient size, connected to a drain leading to a cess-pool or sewer. Such drain should be properly disconnected by means of an interceptor, provided with a sweeping arm. Provision must be made for the inlet of fresh air, and at the head of the drain a ventilator of a diameter of at least four inches should be carried to a point above the ridge of the shed.

The best bedding material for cows is wheat straw. In districts where straw is very dear fine wood shavings or sawdust, although of low manurial value, are clean and efficient substitutes.

Peat moss litter has the objections that it always looks dirty and is apt to block drains.

To "muck" a shed out twice in twenty-four hours is not sufficient, it should be done oftener, and as necessity arises in the working hours, but it must not be done when the cows are resting, to disturb at this time diminishes the milk yield.

Sufficient attention to the grooming of milch cows is not usually given. The teats and udders should be washed before each milking, and the bodies of the cows cleaned every day. Many owners object to their cattle being washed. At one shed under my supervision the hind quarters of the cows are washed daily with cold water, no colds are caught or chills taken in this process, and the appearance of the cows is immensely improved thereby. It is very necessary that the milking stools should be washed frequently, the milker is continually handling them, and if dirty, they foul his hands which are to be immediately engaged in milking. Cow-pox may be spread from a diseased to a healthy cow by means of a dirty milking stool; probably contagious mammitis of cows would be also so conveyed from animal to animal.

Normal milk within the udder receptacles of the cow is practically sterile. With the intention of limiting, as far as possible, the access of bacteria to the milk a piece of clean linen or a fine strainer covered with a layer of cotton wool put at the top of the pail during the process of milking will be found to much lessen their quantity. With the same end in view the shed-floors should be washed daily with clean water, and no poultry, horses, or pigs should be kept in the cowshed; the manure heap or receptacle also should be quite 40 ft. from the door of the shed, and grain pits having impervious sides and bottoms should be outside the shed and so arranged that the effluvium from the grains does not gain access to it.

Much of the subject-matter of this paper could have been more efficiently dealt with by an architect.

For the control of our milk supply cowshed inspection is very necessary. I have already alluded to the necessity of the use of pure water for the cleansing of milk vessels.

Bearing in mind that milk is so frequently contaminated with the germs of disease after leaving the cow, it is obvious that the health of cowmen and their families is of paramount importance, but hardly less important, if at all, is the condition of the health of the cows themselves.

In an issue of model bye-laws for the use of local authorities, under the Dairies, Cowshed and Milkshops Order of 1885, provision is made in Article 2 for the inspection of cattle in a dairy by the medical officer of health or inspector of nuisances, no mention is made of inspection by veterinary surgeons. Recognising the responsibility of the position of medical officers of health, no one can suggest that dairy cattle should not at all times be open to their inspection.

On the other hand it is difficult to understand why inspectors of nuisances should be inspectors of cattle. We see announcements in local newspapers of sanitary inspectors being appointed inspectors under the Diseases of Animals Acts, 1898.

I am told that the duties of an inspector of nuisances or sanitary inspector necessitates his attendance at all outbreaks of scarlatina, diphtheria, and other contagious disease in his district, that he has to supervise the disinfection of, or himself to disinfect, the apparel and bedding of the patients, to superintend their removal to isolation hospitals, and pay frequent visits to those institutions.

It is incredible that any gentleman who has these important duties to perform can properly be in any way associated with the production and distribution of milk, a fluid which is at all times ready to absorb disease germs, and which forms such an excellent medium for their growth, multiplication, and eventual distribution.

To recognise the existence of disease in a cow, and to correctly estimate its importance to the public health, requires a special training only acquired by years of study. Some knowledge of bacteriology, skill in the use of the microscope, and, above all, an actual practical experience of the details of the daily life of dairy cattle are essentially necessary. I venture to think that such a combination of scientific knowledge and practical experience is but rarely found, except in members of the veterinary profession, I confidently anticipate that the day is not far distant when all local authorities will number amongst their appointed officers a duly qualified Veterinary Inspector.

DISCUSSION.

Mr. FORD referred to the necessity of making the Milkshops and Cowsheds Order compulsory. At the present time it was not compulsory on rural authorities, and until they had some compulsory measures for authorities he did not know that much could be done. They had been in the hands of those who were supposed to know better than themselves in the matter of legislation, but they had not done their duty in regard to cowsheds, farm buildings, and other houses. People in the country were rapidly rising to the fact that they were going to have their health preserved whether the landlords wished it or not.

Mr. SHELMARDINE referred at length to the question of ventilation, and said that the more ventilation cows had in their sheds the better they were, but from what he gathered cow-keepers said that cows gave more milk when they were kept warm. The drinking of pure water was a very valuable thing coupled with a thorough cleansing of all utensils.

Mr. SLOCOCK said the three most important essentials were ventilation light, and a good supply of pure water. He put light first, ventilation second, and water third. They found a difficulty in getting people to erect ideal sheds, and if anyone had sufficient accommodation for 12 or 14 cows with sufficient tieing up room, he did not see why they should not remain there.

Mr. GOODALL advocated the raising of the flooring of cowsheds, which flooring should be dry. The buildings should have a sunny aspect, say south or south west, open from end to end, chalk floors were as good as they could have.

Councillor ROBERTS said they must all fully recognise the importance of a pure water supply for drinking purposes. What cows drank affected the milk just the same as when a mother took physic it affected the child she was nursing.

Alderman CAIN said he had been surprised to see cows in a healthy condition grazing upon a sewage farm. There was no disease among the cattle which were kept on the sewage farm for a specified time, and they frequently took prizes at Wakefield market.

Mr. A. L. BUTTERS referred to the difficulty which would result in regard to the rebuilding of sheds and the removal of cows, and dwelt at length upon the importance of ventilation, which if perfect and adequate would do away to a large extent with the necessity of removal.

Captain J. MOORE dealt more particularly with the efforts made to get rid of tuberculosis. It was an important matter for the Government to take in hand, and especially if they had to pay for every cow destroyed. They must have reform in some respects. He pointed out several means of ventilation which were requisite in order to keep the cows at a proper temperature and not subjecting them to draughts. Taking the matter altogether he came to the conclusion that the whole matter must be dealt with a firm hand, and could only be done by legislation, even though the government had to come to the assistance of the farmers, many of whom hardly knew how to pay their way.

Mr. HOBDAY gave particulars as to some forty cattle which he visited in two very large sheds, the sanitary arrangements of which were in their way perfect. It was a model cowshed, but as to ventilation he found the temperature of the shed so hot that he could scarcely breathe. That showed a lack of ventilation. He advised the owner to keep the cows in a cooler atmosphere, with the result that their milk was very much improved.

Mr. W. G. DAVIS related his experience as to visiting certain sheds and finding the ventilation not what it ought to be. As a result of the improvements afterwards made in the shed the condition of the cows was materially improved.

Colonel JONES, V.C., preferred to keep cows apart by a small wall, and advocated a large space being left between each cow. The inspection ought to be done by veterinary surgeons. He also advocated more perfect hygienic arrangements.

Mr. VILLAR replied on the various points raised, and thought there were some hazy ideas as to the quantity of air which cattle should have. Ventilation was a most important factor. If there was no cure for tuberculosis ventilation would go a long way towards its mitigation. The only way in which his suggestions could be carried out was by special legislation.

It was unanimously resolved "That the Council of the Sanitary Institute be recommended to urge upon the Government to take steps by which the adoption of the provisions of the Cowsheds, Dairies, and Milkshops Ordershould be made compulsory upon local authorities."

It was further resolved "That the Government be urged to undertake a scheme for the reduction of bovine tuberculosis; and that they endeavour to secure similar action on the part of other associations interested in the subject."

The Conference then adjourned till the next morning

EXTRACTS AND NOTES.

THE WORCESTER ANTHRAX CASE.

Mr. W. B. Hulme and a city jury were engaged at the infirmary on Thursday, 7th inst., enquiring into the cause of death of the youth Arthur Clark, who died in the infirmary from anthrax.—Deceased was employed at Webb's horsehair factory. It appears that some eighteen months ago a case of anthrax occurred at the factory, the disease being contracted, it was supposed, from hair passing through one of the carding mills. The mill has been continuously worked since, but no further case arose until recently, when this mill broke down, and was taken to pieces for repair. The deceased and two other boys assisted in taking the machine down, and a great deal of fine dust was found in the inside of the machine, which could only be removed when the machine was taken to pieces. Immediately afterwards, the other two boys had to be treated at the infirmary for anthrax, and they have recovered. Later the deceased developed symptoms of anthrax, and, despite attention at the infirmary, the disease proved fatal. Messrs. Webb disinfect suspected hair—that is, hair other than English, Australian, and South American, which is looked upon as safe—by placing the hair under high-pressure steam, the only effectual way to kill anthrax spores. It is therefore believed that in taking the machine to pieces the anthrax spores, deposited in parts of the machine eighteen months ago, were disturbed, and commenced active operations upon coming into contact with human bodies.—The jury returned a verdict in accordance with the medical evidence given, which was that it was a typical case of anthrax, and attributed no blame to Messrs. Webb, whose precautions for the safety of their employés they commended. The machine and premises have since been thoroughly and effectively disinfected.—*Birmingham Mail.*

The Royal Photographic Society.

The Forty-Forth Annual Exhibition will be held at the Gallery of the Royal Society of Painters in Water Colours, 5a, Pall Mall East, and will be opened to the public on Monday, Sept. 25th, for a period of seven weeks. The following have been elected the judges:— Pictorial Section—Harold Baker; Colonel J. Gale; A. Horsley Hinton; B. W. Leader, R.A.; W. L. Wyllie, A.R.A. Technical and Scientific Section—Captain W. de W. Abney, C.B., F.R.S.; T. Bolas, F.I.C., F.C.S.; Chapman Jones, F.I.C., F.C.S.

ANTHRAX AT LONG BUCKBY.

Cremation by the County Council

The old saying that misfortunes never come singly is often exemplified, and the truth of the adage will appeal especially to Mr. John Clarke, as well as other residents in Long Buckby. It will be remembered that last week the fact was recorded in *The Northampton Daily Chronicle* of a bullock belonging to that gentleman, a farmer in the village, having been found dead from anthrax, and having been subsequently cremated as an experiment by the Northamptonshire County Council authorities, to whom belongs the distinction of having been the first public body to attempt the cremation of carcases of dangerously diseased animals. That experiment was carried out with highly satisfactory results, but it was hardly anticipated that so soon afterwards as Monday of this week there would be a repetition. However, on Saturday night Mr. Clarke discovered in a barn on his home close another bullock apparently dangerously affected with the deadly malady, and it was at once despatched, and the County authorities informed. The beast, a valuable one, worth probably about £18, had been grazing in the same field as the one which died a week earlier, and immediately the second case became known two other bullocks, which had also been in the field, were penned up, and not allowed to be removed, though at present they have fortunately showed no signs of infection. At present the idea of cremation in this direction has only reached the experimental stage; indeed, only two previous attempts are known, and those are those undertaken by the Northamptonshire County Council. The first was carried out, at the Council's suggestion, in a field near Hardingstone, by Mr. Landon, an Inspector of the Board of Agriculture, the carcase of a horse being cremated; and the second was that at Long Buckby last week. The apparatus by which the cremation is effected is the simple though ingenious invention of Mr. H. Roberts, of Deanshanger, a County Alderman, who has evinced a keen interest in the experiments. It is in reality a huge grid, large enough to hold the carcase of a bullock, or horse, and constructed over a pit sunk in the ground. At the bottom of the pit a flue is made of loose bricks, communicating at either end with an air shaft, which protrudes above the surface of the ground. Above this a large fire, consisting of faggots, coal and hard wood, saturated with an inflammable oil, is built up, nearly to the level of the ground, and the framework of the grid is placed round the pit. A thick iron girder spans the centre, and upon this from either side rest the gridirons. In this instance the apparatus was erected immediately in front of the hovel in which the beast died, about four yards away, and the carcase—which must not on any account come in contact with the flesh of those engaged in the work—was hauled out and up the adjustable side on to the grid by means of stout ropes. Then the sides were fixed up, and further fuel heaped on top, so that all that could be seen of the beast, when the fire was ignited, was a stray leg, or one of the horns, protruding through the pieces of coal, of which a ton was brought into use. Monday's operation was witnessed by hundreds of persons, who appeared highly interested. As soon as the match was applied to the paraffin-soaked fuel the flames leapt high into the air, and, gradually spreading, soon assumed the proportions of a huge bonfire. Dropping firebrands ignited the underneath fire, and the whole affair was left to burn from five o'clock until nine. At the end of the four hours there was, of course, very little left of the carcase, and then the iron girder supporting the grids was withdrawn, and they dropped down by the sides of the pit, the whole blazing mass falling into the pit bottom, and there being further consumed, until absolutely nothing but the merest ashes remained. Everything with which the diseased animal had come into contact with was consumed in the fire with it, so that all danger of further infection in that direction was averted. The fire was allowed to burn itself out, and this morning further precautionary measures were adopted. Two cartloads of manure, taken up from the field in which the infected beasts had been, were destroyed, and the field thoroughly spread with fresh-burnt lime, whilst inside the hovel where the carcase lay, and for some little distance around, four inches of the surface of the ground was dug up, and the earth thus removed thrown into the pit with the remains of the fire, and at night covered in, so that apparently not a vestige of the dread disease was left.

CANCER IN CATTLE: A STARTLING STATEMENT.

Mr. R. Jasper More, M.P., in a letter to the Secretary of the Cancer Society, has made some startling statements concerning cancer in cattle, and the possibility of its communication to human beings. Inquiries he had made led to the conclusion that cancer is more common amongst cattle than tuberculosis. Seeing that a very large proportion indeed of cattle is known to be tainted with tuberculosis, the statement in itself is highly disquieting and difficult to credit; but he goes on to say that the meat of animals suffering from the disease is "generally sold for food." This suggests, naturally, the idea that the disease may, in this way, be communicated to human beings, and Mr. More takes that view, since he says, "if the meat is not thoroughly cooked cancer may be spread in this way." He goes on: "Where cancer is hereditary, might not this be the first cause. The farmers tell me that cancer is generally found near the lips or the throat of the cow. The matter may be kept quiet by them in such cases, in which the animal seems generally to be killed and sold for food, often only half-cooked." Mr. More is a sound authority on agricultural matters, and that makes his declaration regarding the prevalence of cattle cancer weighty; but on the medical aspect of the matter his deductions may be erroneous.—*Bath Chronicle.*

Henry D. Lewis, owner of the adjacent Bedgebury Estate, was at Cranbrook (Kent) Police-court, recently, charged, at the instance of the Board of Agriculture, with importing a dog into England under a licence granted by the Board, and detaining it at a different place than that specified in the licence. The animal had been put into a room at Bedgebury instead of in a loose-box, as authorised. The maximum fine of £20 was imposed. The Magistrates remarked on Kent being now free from the Rabies Order.

CORRESPONDENCE

ASSISTANTS AND "LOCUMS."

Dear Sir,

If you will excuse me troubling you again, I should be glad if you would publish the enclosed letter from an M.R.C.V.S., as it supports my statements in *The Record* of September 2nd.

The gentleman requires a qualified "locum tenens" for a fortnight, and I asked the usual two guineas a week and rail fare. Observe his reply:

"In answer to yours of to-day, I think your charges to high considering you board and lodge in the house. I

would not mind paying your railway fare and give you a small present when you leave."

My answer to this was to the effect that "a small present" was too indefinite a salary for a man who has to earn his living. How generous of him "not to mind paying my railway fare!"

I do not wish the letter returned—I have plenty more like it—and am afraid it is not a sufficiently rare specimen for the College Museum.

Please do not publish the name or address of the gentleman, as I am of a merciful and forgiving disposition.
—Yours faithfully,

"GALLEY SLAVE."

Sir,

A desultory discussion has been going on lately in your journal in regard to the grievances of assistants and 'locums," and, as all the latter make them appear a 'much illused body,' perhaps you will allow me a little space to state my experiences as an employer. It is possible I have been so unlucky as to draw a blank each time, but will allow your readers to judge for themselves, and if other members who *unfortunately* require to employ an assistant do not bear me out in my statements, I am prepared to consider myself at fault in expecting too high a standard. I may here state that as my practice is a country one I cannot afford a very large salary, but I am not ashamed to say I offer board, &c., and 30s. per week. Lest I should be asked what kind of men I expect for this pittance, I may state I have had *several* applications from men with the *highest* credentials (so they informed me) willing to take less. The men I employed here have invariably been highly recommended, and really how anyone can so lightly give these testimonials which, to say the least about them, are very unfair to an employer completely baffles me. I have no desire to judge another's thoughts harshly, ever striving to remember the lines,

> "Compound for sins they are inclined to,
> By damning those they have no mind to."

But drunkenness seems to be a great stumbling block, and this offence I say without fear of contradiction is *unpardonable* be it in principal or assistant. This offence, together with general indifference, want of tact and in fact incompetence to successfully carry on a practice in the principal's absence, are surely charges requiring some attention from those who would have better remuneration.

One of your correspondents advocates an assistants' union which would boycott employers who do not feel inclined to pay what they considered a standard wage, I for one should only be too pleased to support this union providing I also could ventilate my grievances before them and receive some satisfaction. No doubt I will be told my remedy is in the law if my assistant does anything actionable, and this is quite true, but how many employers care to carry the matter further, to be accused by outsiders of vindictiveness, or again how many assistants are worth powder and shot if a civil action is brought against them.

There are many mean despicable actions a discharged assistant can perpetrate which are quite outside the law, but nevertheless require discouraging and their authors severely reprimanding.

I refer more particularly to sneaking about the "pubs," and divulging secrets about their late principal's business, seemingly determined not to stop at any dirty trick if it can only injure him. Yes, let us have fair remuneration for work done by all means (although I am afraid most men I have met with are quite incapable of comprehending a point even if for their good), but let us first hear both sides of this question. C. P.

Sir,

While on the subject of assistants and locum tenens, I may say that many who offer themselves for such appointments are dear at any price. A great deal of money might be made if they could be bought at an experienced practitioner's valuation and sold at their own estimated price. Many established veterinary surgeons who, through inability to attend their cases, would have assistance at a reasonable price, but when he has to pay probably half his income to a qualified assistant he prefers to do the best he can alone.

I would like to ask you, Mr. Editor, if it is customary when a locum is engaged for a week or a fortnight to have the usual restrictive agreement signed. One locum I had this year, who hailed from the land of nanny goats, was hanging about the town for six weeks after I had finished my holiday, picking up what business he could, sponging on my friends, running into debt, and in other ways acting unprofessionally and dishonourably. I have an idea that this is not the first time this particular man has acted in such a manner, and probably it won't be the last. Therefore, I enclose his name and address as you might hear more about him from other quarters,—Yours truly.

YORKS.

Sir,

I notice a letter in *The Record* of September 9th signed "Fair Play." My experience has been that you have to be punctual at meals, unless you wish to have half cold food, and in some cases perhaps go rather short. I therefore do not think any blame attaches to the gentleman ("individual" *Fair Play* calls him) who was particular about being punctual at meal times.

As to tact, this is a thing born in a man, not made or taught at College. Some men may acquire a certain amount of low cunning which a smart client will nearly always see through and think of although he does not speak about it directly.

Why do some individuals take such an interest in a "friend's" locum? Surely the members of his profession are improving in brotherly love, probably the "friend" could have obtained a man possessing tact and a disregard for proper meal times, if he had paid him well.

This correspondence was started with a letter from me and my object was to try to improve the salaries of assistants and locum tenens, so really, "Fair Play's" letter has little to do with the subject, his grievance is, (I was going to say personal) as he puts it, *friendly*. Why does not the friend air his grievance himself, surely a direct complaint would be better than getting his friend to write for him, or is this an example of "tact"?

Anybow the fact remains that assistants are paid too small salaries and I for one would join a society whose object was to procure for qualified men a wage in proportion to their position.

I think if some influential member of the profession would take this matter up he would earn the everlasting gratitude of hundreds of men who sign themselves

M.R.C.V.S.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. A. H. Jacobs, E. G. Johnson, B. Eggleton, J. G. Blackwood, W.W. Grasby, S. L. Stephens. Major Nunn, C. P. "Yorks." "Galley Slave."

The Agri. Jrnl. (Cape), *Jrnl. Comp. Med. and Vet. Archives* (Phila.) *The Northampton Chronicle*, *The Newbury Weekly News*.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers containing facts of interest

Communications for the Editor to be addressed 20 Fulham Road, S.W.